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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,916	12/08/2003	Minehiro Tonosaki	246219US6	9663
22850	7590	05/18/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MCKINNON, TERRELL L	
			ART UNIT	PAPER NUMBER
			3743	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/728,916

Applicant(s)

TONOSAKI ET AL.

Examiner

Terrell L Mckinnon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

***Response to Amendment***

Receipt is acknowledged of applicant's amendment filed October 28, 2004. Claims 1-10 have been canceled without prejudice. Claims 11-22 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 11-22 have been considered but are moot in view of the new grounds of rejection.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newton et al. (U.S. 6,437,981) in view of Antoniadis et al. (U.S. 5,948,552).

Newton discloses a thermally enhanced microcircuit package and method of forming comprising:

- a refrigerant, an evaporator formed between a glass and a substrate;
- a condenser formed between a glass and a substrate;
- a liquid passage linking the evaporator and condenser configured to allow the refrigerant to flow from the condenser to the evaporator;
- a gas passage linking the evaporator and condenser configured to allow the

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refrigerant to flow from the evaporator to the condenser;

- a wick being included in one of the evaporator, the condenser, the liquid passage or the gas passage;
- the substrate is Si, the refrigerant is a material including hydrogen;
- the glass and the substrate are bonded by anodic bonding.

Newton's invention discloses all of the claimed limitations from above except for the glass and/or the substrate is covered with a stable material; the stable material is selected from the group consisting of SiO<sub>2</sub>, SiN, SiC and combination thereof; and the wick is covered with a stable material.

3. However, Antoniadis teaches the glass and/or the substrate is covered with a stable material; the stable material is selected from the group consisting of SiO<sub>2</sub>, SiN, SiC and combination thereof (column 6, lines 48-55); and the wick is covered with a stable material.

Given the teachings of Antoniadis, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thermally enhanced microcircuit package of Newton with the glass and/or the substrate being covered with a stable material; the stable material is selected from the group consisting of SiO<sub>2</sub>, SiN, SiC and combination thereof; and the wick being covered with a stable material.

Doing so would provide an improved thermally efficient heat-dissipating device.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to

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applicant's disclosure. The following references listed on the USPTO 892 discloses related limitations of the applicant's claimed and disclosed invention.

### ***Response to Arguments***

Applicant's arguments filed October 28, 2004 have been fully considered but they are moot in view of the Non-Final Rejection as stated above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "Terrell L. McKinnon". The signature is stylized with a large, sweeping initial "T" and "M".

Terrell L. McKinnon  
Primary Examiner  
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May 16, 2005